QC ABSTRACT

NAME OF WORK: Improvements to General Public Toilet and Seepage Maintenance in Ward No 11 (Kuvempunagara)

SL NO	Item Of Work	Name of Test	Frequency of Test/Quantity	Executed Quantity	Number of Tests Required	Number of Tests Conducted
		Materials				
1	Cement	Fineness by dry sieving	One Test		1	1
		Finess by Air permeablity method	One Test		1	1
		Density	One Test		1	1
		Standard Consistency	One Test		1	1
		Initial Setting time	One Test		1	1
		Final Setting time	One Test		1	1
		Soundness (Le Chatelier's Method)	One Test		1	1
		Compressive Strength	One Test		1	1
2	Coarse aggregate(40 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
3	Coarse aggregate(20 mm down size)	SIEVE ANALYSIS	One Test		1	1
		Flakiness Index	One Test		1	1
		Elongation Index	One Test		1	1
		Specific Gravity	One Test		1	1
		Bulk Density(Loose)	One Test		1	1
		Bulk Density(Compacted)	One Test		1	1
		Water Absorption	One Test		1	1
		Aggregate crushing Value	One Test		1	1
		Aggregate Impact Value	One Test		1	1
4	Fine aggregate	SIEVE ANALYSIS	One Test		1	1
		Water Absorption	One Test		1	1
		Specific Gravity	One Test		1	1
		Material finer than 75 micron	One Test		1	1
5	Steel	Bend test	One Test		1	1
		Tensile Test	One Test		1	1
		Yield Test	One Test		1	1
		ReBend test	One Test		1	1
6	Block(400*150*200)	BLOCK DENSITY	One Test		1	1
		WATER ABSORPTION	One Test		1	1
		DIMENSION ANALYSIS	One Test		1	1
		COMPRESSIVE STRENGTH	One Test		1	1
7	Block(400*100*200)	BLOCK DENSITY	One Test		1	1
		WATER ABSORPTION	One Test		1	1
		DIMENSION ANALYSIS	One Test		1	1
		COMPRESSIVE STRENGTH	One Test		1	1
8	RMC(M20)	Compressive Strength(7days and 28days)	1 set /1-5 cum	3.86	2	2
9	Mortar Sand	Water Absorption	One Test		1	1
		Specific Gravity	One Test		1	1
		Material finer than 75 micron	One Test		1	1
		Compacted Bulk Density	One Test		1	1
		Loose Bulk Density	One Test		1	1
		SIEVE ANALYSIS	One Test		1	1

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10	Plaster Sand	Water Absorption	One Test		1	1
		Specific Gravity	One Test		1	1
		Material finer than 75 micron	One Test		1	1
		SIEVE ANALYSIS	One Test		1	1

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2020-10-02-21** **Date: 19-09-20**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to General Public Toilet and Seepage Maintenance in Ward No 11 (Kuvempunagara)
Agency	:	M/s ARM Constructions, (Prop) Murthy K.G, #43/4, Ganesha Temple, 6th Cross, Kodigehalli, Bangalore-92
Customer's Reference	:	BBMP/EE/BTP/WO/111/2020-21
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	16-09-20
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 (Part 1,2 3,4,5, 6,11):1988 IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4 IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5 IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5 IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6
Date of test	:	17-09-20
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	1.79	_
2	Finess by Air permeablity method (m^2/kg,Min)	295.9	225m^2/kg, Min
3	Density (gm/cc)	3.15	_
4	Standard Consistency (%)	28.5%	Not specified
5	Initial Setting time	145 minutes	Not less than 30 minutes
6	Final Setting time	255 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1.0mm	Not more than 10 mm

* The results obtained are satisfactory as per standard requirements.

Note:

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2020-10-02-21** **Date: 19-09-20**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to General Public Toilet and Seepage Maintenance in Ward No 11 (Kuvempunagara)
Agency	:	M/s ARM Constructions, (Prop) Murthy K.G, #43/4, Ganesha Temple, 6th Cross, Kodigehalli, Bangalore-92
Customer's Reference	:	BBMP/EE/BTP/WO/111/2020-21
Source of Sample	:	Sample supplied by Agency
Sample condition	:	Satisfactory
Date of Receipt	:	16-09-20
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	16-09-20

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	178	178	1.2	98.8	90-100
3	20 mm	7145	7323	48.8	51.2	30-70
4	10 mm	5699	13022	86.8	13.2	10-35
5	4.75 mm	1705	14727	98.2	1.8	0-5
6	Pan	273	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2020-10-02-21** **Date: 19-09-20**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	11.7	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	10.9	
3	Specific Gravity	2.66	_
4	Bulk Density(Loose) (Kg/l)	1.41	_
5	Bulk Density(Compacted) (Kg/l)	1.47	_
6	Water Absorption(%)	0.24	_

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Note:

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2020-10-02-21** **Date: 18-09-20**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to General Public Toilet and Seepage Maintenance in Ward No 11 (Kuvempunagara)
Agency	:	M/s ARM Constructions, (Prop) Murthy K.G, #43/4, Ganesha Temple, 6th Cross, Kodigehalli, Bangalore-92
Customer Reference	:	BBMP/EE/BTP/WO/111/2020-21
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	16-09-20
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	16-09-20

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	208	208	4.2	95.8	90-100
3	10 mm	2787	2995	59.9	40.1	25-55
4	4.75 mm	1804	4799	96.0	4.0	0-10
5	Pan	201	5000	100	0	_

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2020-10-02-21** **Date: 18-09-20**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	9.7	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	12.5	
3	Specific Gravity	2.63	_
4	Bulk Density(Loose) (Kg/l)	1.45	_
5	Bulk Density(Compacted) (Kg/l)	1.51	_
6	Water Absorption(%)	0.23	_
7	Aggregate crushing Value(%)	23.8	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	22.7	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2020-10-02-21** **Date: 18-09-20**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to General Public Toilet and Seepage Maintenance in Ward No 11 (Kuvempunagara)

Agency : M/s ARM Constructions, (Prop) Murthy K.G, #43/4, Ganesha Temple, 6th Cross, Kodigehalli, Bangalore-92

Customer's Reference : BBMP/EE/BTP/WO/111/2020-21

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 16-09-20

Sample Type : Fine Aggregate

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

Date of test : 16-09-20

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	27	27	2.7	97.3	90-100	90-100	90-100	95-100
3	2.36 mm	55	82	8.2	91.8	60-95	75-100	85-100	95-100
4	1.18 mm	239	321	32.1	67.9	30-70	55-90	75-100	90-100
5	600 micron	205	526	52.6	47.4	15-34	35-59	60-79	80-100
6	300 micron	203	729	72.9	27.1	5-20	8-30	12-40	15-50
7	150 micron	191	920	92.0	8.0	0-10	0-10	0-10	0-15
8	Pan	80	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2020-10-02-21** **Date: 18-09-20**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.5	_
2	Specific Gravity	2.59	_
3	Material finer than 75 micron(%)	6.9	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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TEST RESULTS OF STEEL

Lab ID : **CP-2020-10-02-21** **Date: 22-09-20**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to General Public Toilet and Seepage Maintenance in Ward No 11 (Kuvempunagara)

Agency : M/s ARM Constructions, (Prop) Murthy K.G, #43/4, Ganesha Temple, 6th Cross, Kodigehalli, Bangalore-92

Customer's Reference : BBMP/EE/BTP/WO/111/2020-21

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 21-09-20

Sample Type : Sunvik

Reference to BIS codes : IS 1786-2008, IS:1608-2005(RA 2011), IS 1599-2012.

Date of test: : 21-09-20

Sl.No	Identification of sample	Grade of the sample	Diameter of the steel bar	Weight of the sample	Yield stress	Tensile strength	Elongation	Bend test	Rebend test
			(mm)	(kg/m)	(N/mm2)	(N/mm2)	(%)		
1	Sunvik	Fe500	8	0.391	512	652	20.0%	Satisfactory	Satisfactory
2	Sunvik	Fe500	10	0.616	528	672	20.0%	Satisfactory	Satisfactory
3	Sunvik	Fe500	12	0.888	544	668	20.0%	Satisfactory	Satisfactory
4	Sunvik	Fe500	16	1.581	572	674	19.0%	Satisfactory	Satisfactory
5	Sunvik	Fe500	20	2.476	584	693	19.0%	Satisfactory	Satisfactory
6	Sunvik	Fe500	25	3.472	597	712	18.0%	Satisfactory	Satisfactory

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TEST REPORT ON PHYSICAL REQUIREMENTS OF SOLID CONCRETE BLOCKS

Lab ID	:	**CP-2020-10-02-21** **Date: 01-10-20**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to General Public Toilet and Seepage Maintenance in Ward No 11 (Kuvempunagara)
Agency	:	M/s ARM Constructions, (Prop) Murthy K.G, #43/4, Ganesha Temple, 6th Cross, Kodigehalli, Bangalore-92
Customer's Reference	:	BBMP/EE/BTP/WO/111/2020-21
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	28-09-20
Sample Type/Size	:	Solid concrete blocks size (400X150X200)mm
Reference to BIS codes	:	IS : 2185 (Part 1) : 2005(RA 2010) Concrete Masonry Specification Part 1:Hollow and Solid Concrete Blocks (Dimensions -Annex-B, Clause 9.2 and 10 , Block density Annex -C Clause 9.3 and10, Compressive strength Annex -D Clause 9.4 and 10, Water absorption Annex -E Clause 9.5 and 10)
Date of test	:	28-09-20

BLOCK DENSITY:

Sl. No.	Measurement of overall Dimensions of Individual Blocks			Overall Volume of the Block in Cubic Centimetres	Weight of Oven Dried Block in Kilograms to the nearest 10 Gram	Block Density in Kg/cum*10^6	Avg.Block Density in (Kg/cum)	As per IS 2185(Part 1) :2005 (RA 2010)
	Length	Breadth	Height					
	mm	mm	mm	(Cm^3)	Kg	Kg/m^3	Kg/m^3	
1	401	152	200	12190	32.138	2636.4	2609.4	Not less than 1800Kg/m^3
2	402	153	203	12486	32.255	2583.3		
3	402	151	203	12323	32.144	2608.5		

WATER ABSORPTION:

Sl. No.	Wet weight after water absorption	Dry weight (Oven dry)	Water Absorption	Avg.Water Absorption	As per IS 2185(Part 1):2005 (RA 2010)
	kg	kg	%	%	
1	33.91	32.25	4.89	4.25	Shall not be more than 10% by mass
2	33.57	32.14	4.28		
3	33.44	32.24	3.59		

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Lab ID : **CP-2020-10-02-21** **Date: 01-10-20**

DIMENSION ANALYSIS

Sl.no	Length mm	Breadth mm	Height mm	Requirement as per IS 2185(Part 1):2005
1	402	151	203	Length : ± 5mm Breadth : ± 3mm Height : ± 3mm
2	402	153	202	
3	402	152	202	
4	401	150	203	
5	403	150	201	
6	403	150	201	
7	400	151	201	
8	403	149	202	
9	400	153	199	
10	400	151	201	
11	402	151	202	
12	399	152	200	
13	402	149	199	
14	403	152	202	
15	400	149	200	
16	400	152	203	
17	403	152	201	
18	400	152	200	
19	403	151	199	
20	402	149	201	
Average of 20	**402**	**151**	**201**	

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Lab ID : **CP-2020-10-02-21** **Date: 01-10-20**

COMPRESSIVE STRENGTH:

Sl. No.	Size of solid block		Area	Failure Load	Compressive strength	Average Compressive strength
	Length	Breadth				
	mm	mm	(mm^2)	(KN)	N/mm^2	(N/mm^2)
1	402	151	60844	345.3	5.7	5.3
2	402	153	61304	309.4	5.0	
3	402	152	60904	322.9	5.3	
4	401	150	60023	302.2	5.0	
5	403	150	60643	306.2	5.0	
6	403	150	60472	323.9	5.4	
7	400	151	60527	305.0	5.0	
8	403	149	60145	335.0	5.6	

As per IS Requirements (Table 2, Clause 5.1, 5.2 and 9.4)

Compressive strength		
Grade	**Minimum average**	**Minimum Individual units.**
C (5.0)	5.00 N/mm^2	4.00 N/mm^2
C (4.0)	4.00 N/mm^2	3.20 N/mm^2

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TEST REPORT ON PHYSICAL REQUIREMENTS OF SOLID CONCRETE BLOCKS

Lab ID	:	**CP-2020-10-02-21** **Date: 01-10-20**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to General Public Toilet and Seepage Maintenance in Ward No 11 (Kuvempunagara)
Agency	:	M/s ARM Constructions, (Prop) Murthy K.G, #43/4, Ganesha Temple, 6th Cross, Kodigehalli, Bangalore-92
Customer's Reference	:	BBMP/EE/BTP/WO/111/2020-21
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	28-09-20
Sample Type/Size	:	Solid concrete blocks size (400X100X200)mm
Reference to BIS codes	:	IS : 2185 (Part 1) : 2005(RA 2010) Concrete Masonry Specification Part 1:Hollow and Solid Concrete Blocks (Dimensions -Annex-B, Clause 9.2 and 10 , Block density Annex -C Clause 9.3 and10, Compressive strength Annex -D Clause 9.4 and 10, Water absorption Annex -E Clause 9.5 and 10)
Date of test	:	28-09-20

BLOCK DENSITY:

Sl. No.	Measurement of overall Dimensions of Individual Blocks			Overall Volume of the Block in Cubic Centimetres	Weight of Oven Dried Block in Kilograms to the nearest 10 Gram	Block Density in Kg/cum*10^6	Avg.Block Density in (Kg/cum)	As per IS 2185(Part 1) :2005 (RA 2010)
	Length	Breadth	Height					
	mm	mm	mm	(Cm^3)	Kg	Kg/m^3	Kg/m^3	
1	399	100	201	8020	33.137	4131.8	4032.4	Not less than 1800Kg/m^3
2	398	100	198	7880	32.675	4146.4		
3	400	102	202	8242	31.474	3819.0		

WATER ABSORPTION:

Sl. No.	Wet weight after water absorption	Dry weight (Oven dry)	Water Absorption	Avg.Water Absorption	As per IS 2185(Part 1):2005 (RA 2010)
	kg	kg	%	%	
1	33.91	32.25	4.89	4.25	Shall not be more than 10% by mass
2	33.57	32.14	4.28		
3	33.44	32.24	3.59		

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Lab ID : **CP-2020-10-02-21** **Date: 01-10-20**

DIMENSION ANALYSIS

Sl.no	Length mm	Breadth mm	Height mm	Requirement as per IS 2185(Part 1):2005
1	401	100	202	Length : ± 5mm Breadth : ± 3mm Height : ± 3mm
2	403	103	200	
3	401	103	202	
4	400	102	199	
5	404	101	201	
6	401	100	200	
7	403	101	202	
8	404	99	202	
9	400	101	202	
10	402	102	203	
11	400	100	203	
12	401	99	202	
13	401	103	199	
14	399	100	203	
15	402	103	199	
16	400	101	203	
17	403	102	201	
18	399	100	201	
19	399	102	201	
20	400	102	203	
Average of 20	**401**	**101**	**201**	

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Lab ID : **CP-2020-10-02-21** **Date: 01-10-20**

COMPRESSIVE STRENGTH:

Sl. No.	Size of solid block		Area	Failure Load	Compressive strength	Average Compressive strength
	Length	Breadth				
	mm	mm	(mm^2)	(KN)	N/mm^2	(N/mm^2)
1	401	100	40185	251.4	6.3	5.7
2	403	103	41497	218.6	5.3	
3	401	103	41143	211.0	5.1	
4	400	102	40932	209.9	5.1	
5	404	101	40765	235.9	5.8	
6	401	100	40156	252.0	6.3	
7	403	101	40684	235.3	5.8	
8	404	99	40042	248.6	6.2	

As per IS Requirements (Table 2, Clause 5.1, 5.2 and 9.4)

Compressive strength		
Grade	**Minimum average**	**Minimum Individual units.**
C (5.0)	5.00 N/mm^2	4.00 N/mm^2
C (4.0)	4.00 N/mm^2	3.20 N/mm^2

* The results obtained are satisfactory as per standard requirements.

Note:
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Authorized Signatory
Technical Manager

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97

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Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2020-10-02-21** **Date: 30/09/2020**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to General Public Toilet and Seepage Maintenance in Ward No 11 (Kuvempunagara)

Agency : M/s ARM Constructions, (Prop) Murthy K.G, #43/4, Ganesha Temple, 6th Cross, Kodigehalli, Bangalore-92

Customer's Reference : BBMP/EE/BTP/WO/111/2020-21

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 25-09-20

Customer ID : RMC

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 30/09/2020

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	RMC	M20	23/09/2020	30/09/2020	150.42 X 150.54 X 150.45	22644	8.312	389.5	17.2	17.2
2	RMC	M20	23/09/2020	30/09/2020	150.42 X 150.54 X 150.45	22644	8.331	398.5	17.6	
3	RMC	M20	23/09/2020	30/09/2020	150.32 X 150.54 X 150.35	22629	8.345	380.2	16.8	

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****End of Report****

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HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL |
GEO TECHNICAL | PROJECT MANAGEMENT | SURVEYING SERVICES |

Format No: CP/TF/2017

TEST REPORT FOR SAND MASONRY MORTARS

Lab ID : **CP-2020-10-02-21** **Date: 03-10-20**

Customer : Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.

Address : Vidyaranyapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to General Public Toilet and Seepage Maintenance in Ward No 11 (Kuvempunagara)

Agency : M/s ARM Constructions, (Prop) Murthy K.G, #43/4, Ganesha Temple, 6th Cross, Kodigehalli, Bangalore-92

Customer's Reference : BBMP/EE/BTP/WO/111/2020-21

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 29-09-20

Sample Type : Fine Aggregate, M.Sand for Mortar

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2116-1980 (RA-2007) (Specification for Sand for Masonry Mortars)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

Date of test : 29-09-20

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS: 2116-1980 (RA-2007)
1	4.75 mm	0	0	0	100	100
2	2.36 mm	85	85	8.5	91.5	90-100
3	1.18 mm	200	285	28.5	71.5	70-100
4	600 micron	146	431	43.1	56.9	40-100
5	300 micron	116.5	547.5	54.8	45.3	5-70
6	150 micron	412.5	960	96.0	4.0	0-15
7	Pan	40	1000	100.0	0.0	0

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TEST REPORT FOR SAND MASONRY MORTARS

Lab ID : **CP-2020-10-02-21** **Date: 03-10-20**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	3.18	_
2	Specific Gravity	2.51	_
3	Material finer than 75 micron(%)	12.2	Crushed Fine aggregate Max 15%
4	*Compacted Bulk Density (Kg/litre)	1.90	_
5	*Loose Bulk Density (Kg/litre)	1.73	_

* The results obtained are satisfactory as per standard requirements.

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Technical Manager

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Format No: CP/TF/2017

TEST REPORT FOR PLASTER SAND

Lab ID	:	**CP-2020-10-02-21** **Date: 03-10-20**
Customer	:	Assistant Executive Engineer, Vidyaranyapura Sub Division, BBMP, Bangalore.
Address	:	Vidyaranyapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to General Public Toilet and Seepage Maintenance in Ward No 11 (Kuvempunagara)
Agency	:	M/s ARM Constructions, (Prop) Murthy K.G, #43/4, Ganesha Temple, 6th Cross, Kodigehalli, Bangalore-92
Customer's Reference	:	BBMP/EE/BTP/WO/111/2020-21
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	29-09-20
Sample Type	:	Plaster Sand
Reference to BIS codes	:	IS: 383 : 2016 (Specification for Coarse and fine Aggregates) IS1542:1992 (Sand for Plaster - Specification) IS: 2386 :1963(Part - 1, 3) RA2012 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption
Date of test	:	29-09-20
Total weight taken	:	1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS: 1542:1992
1	10 mm	0	0	0	100	100
2	4.75 mm	35	35	3.5	96.5	95-100
3	2.36 mm	15	50	5	95	95-100
4	1.18 mm	50	100	10	90	90-100
5	600 micron	100	200	20	80	80-100
6	300 micron	215	415	41.5	58.5	20-65
7	150 micron	500	915	91.5	8.5	0-15
8	Pan	85	1000	100	0	---

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2020-10-02-21** **Date: 03-10-20**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.8	_
2	Specific Gravity	2.56	_
3	Material finer than 75 micron(%)	8.5	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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